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ދާރިސްތާ ، ފ، ދިވެހިރާއްޖެ

# CLARIFICATION 1

# 1 ކުރިމަގުވާހަކަ

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| **No:** ނަންބަރ | **TES/2025/G-003** | |
| Project: ޕްރޮޖެކްޓް | **Procurement and implementation of National Vessel Monitoring System** | |
| Issued Date: ތާރީޚް | **10th September 2025** | |
| No. of Pages: - 16 ސަފްޙާ ގާތަށް | BoQ: -00 ބ.ކ.ބ | Drawings: -00 ޑްރޯއިންގ |

Please include this clarification when submitting the bid ތިރީ ކުރަންވާނީ ލަސްވެފައި ހުންނަ ކުރިމަގުވާހަކަ ފާހަގަ ކުރުމަށެވެ.

- **Answers for the Queries are attached with this Clarification.**

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| ނަން **Name: Aminath Naheen Ahmed** | ސޮއި **Signature:** |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 1 | 4.2.1 – General requirement | Global coverage only limited to Iridium? Other service providers not considered? | As specified in the tender document |
| 2 | Technical requirement LOT 4 | Formal certification defines what certifications or what level of certifications are | Relevant to the hardware and software in the tender document and their installation |
| 3 | 4.8.1 Existing System Integration | To know whether propose system can be compatible with existing AIS shore stations, radar, and satellite AIS networks so need detail of the existing system | There is no system right now in the MPS. However, it is expected to integrate with existing MPS IT infrastructure while also bringing the same alignment with the Customs Service. To support the current service providers operating privately, integration is expected. |
| 4 | 4.2.1 – Power and Environmental Specifications | Backup Battery: Autonomous operation for at least 21 days without primary power. à is the battery on board to use or separate battery to be supplied in the solution. | The LSV VMS terminal requires an integrated backup battery capable of powering the transponder for at least 3 weeks (max time expected by working vessels to spend in sea). The power source, antennas, and processing units must be contained within the same (sealed) housing, equipped with tamper-alert function to immediately report any attempt to disfunction, abuse or external interference. |
| 5 | 4.2.1 - Alert and Notification Systems | This is satellite messages / calls? Is this apart from distress emergency calls?<br>a. The vessel crew can send language-localised messages to the authorities | Voice calls are not required.<br>Language localised messages to authority(ies) or family need not be linked |

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| | | b. The vessel crew can send messages to the family members. | to SOS distress functionality, but maybe used for broader communication. |
| 6 | 4.2.3 Fishing Effort Measurement and Gear Monitoring | Need more details on the type of sensors specification requirement for the Fishing Effort Measurement and Gear Monitoring: what are the specifications of the sensors for the below requirement to be captured?<br>a. Near real-time submersible fishing gear soak time measurement<br>b. Near real-time submersible fishing gear temperature and depth profiles<br>c. Winch activity and fishing operation detection<br>d. Sensors wirelessly and automatically transmit data to relevant authorities.<br>e. Real-time Monitoring: Continuous gear status and activity reporting | Follow the specifics in the Tender Document. |
| 7 | 4.2.4 LCD Display Units for LSV Terminals | LCD on Large vessels: User Interface: Touch or button interface for crew interaction – crew use this to send messages to the crew family and authorities? | The onboard LCD Display and Control must enable crew members to send messages to both family and authorities through either a touchscreen or physical button interface. It should support free-text input or selection of predefined messages (for ease of use). |

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| 8 | 4.2.5 Marine Tablets | Is there any specific requirement for the eLogbook Application: Electronic catch reporting and data entry capabilities what data to capture and record? | It's standard catch reporting data. At minimum, vessel ID, license/authorisation number, date & time of activity, fishing area, species type, weight per species caught, and any additional remarks. |
| 9 | 4.2.6 Shore Infrastructure Requirements | Shore infra requirement à Multi-channel Support: Processing data from Iridium satellite and GSM/GPRS networks à so only iridium is the satellite preference? | Iridium satellite constellation apart from GSM/GPRS network is specified for LSV VMS terminal due to its coverage (truly global, A1 – A4) and GDMSS compliance. |
| 10 | 4.3.1 Integration Requirements | Under monitoring - Runs on-premise behind internal firewall. Do we have to provide firewall<br>1. **Integration Requirements:**<br>a. Existing System Compatibility: Integration with AIS shore stations, radar networks, and satellite tracking àwhat are the specification and configuration of the existing system and what level of integration is required<br>b. Government Database Connectivity: Real-time integration with:<br>i. Maritime security agencies databases à any specifics?<br>ii. Customs, fisheries, police and coast guard systems. à any specifics or existing specs?<br>iii. Surveillance platforms à any details on the existing? | This will be a phased implementation, and requirements will be shared with successful bidder. |

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| | | c. Existing tracking device service providers à is there a list of existing service providers? And details of their platforms and API availability | |
| 11 | 4.5.4 IMO and IOTC Compliance | IOTC Requirements: Compliance with Indian Ocean Tuna Commission VMS specifications so all vessels are to follow this requirement? | Follow 4.6.1 (international standards compliance) |
| 12 | 4.7.1 Performance Specifications | Position Update Latency: Maximum 30 seconds from device transmission to system display what if vessel is not moving on or on shore also same applies? | Latency requirements apply regardless of the vessel position or movement. |
| 13 | 4.8 INTEGRATION SPECIFICATIONS | **Government Database Integration:** à API's are available for the integration ?<br>• Vessel Registry: Real-time integration with national vessel registration databases<br>• Licensing Systems: Integration with fishing license and permit databases<br>• Customs Systems: Integration with trade and customs clearance systems<br>• Security Databases: Integration with security and law enforcement databases | Multi-agency interfacing will be implemented in phases. The first phase will focus on the establishment, commissioning, and validation of the VMS at the MPS. Each subsequent integration capability will be validated, implemented, tested, and deployed under the oversight of the contracting party. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 14 | 4.8.2 Third-Party Service Provider Integration | Satellite services - > Satellite Services: Integration with multiple satellite communication providers à does this mean though iridium is mentioned above the system should have the capability to support other satellite service providers? | As specified in 4.2.1. However, 4.8.2 allows other satellite services aligned with 4.2.2 may be supported. |
| 15 | | Does the bidder need to propose only hardware resources such as compute, storage, and memory, or do you already have internal network layer components (switches, firewalls) that can be leveraged for the virtualization infrastructure? | Propose with everything, except internal network components. |
| 16 | This is a general query | Does the bidder need to propose a separate encrypted backup solution (cloud/local), or can it be managed using the existing internal local backup solution? | An encrypted backup solution must be provided as per the specifications in 4.3.1. |
| 17 | Page 58 – Section VII: Schedule of Requirements, Lot 1: Hardware Supply, Item 1.3 'Fishing effort detection' (quantity shown as "Sets" without a number) | Please confirm the required quantity (number of sets) for Item 1.3 "Fishing effort detection" under Lot 1. | 10 systems for detecting fishing effort. |
| 18 | Page 58 – Section VII: Schedule of Requirements, Lot 1; Items 1.1 (LSV: 2,000 units) and 1.2 (SSV: 3,000 units) listed; Item 1.3 (Fishing effort detection – Sets) quantity not specified | Of the 2,000 LSV and 3,000 SSV vessels, how many vessels are expected to be equipped with fishing-effort sensor sets/tags (Item 1.3)? Is the intent one set per vessel or per gear type on a vessel? | At least 10 systems for detecting fishing. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 19 | Section IV – Technical Specifications, 4.2.3 Fishing Effort Detection Sensors | Please confirm the fishing methods to be measured via sensors (e.g., pole-and-line, handline, longline, gillnet, traps/other). For each method, identify the gear elements that must carry tags/sensors. | Maldives does not follow net and trap methods. |
| 20 | Section IV – Technical Specifications, 4.2.3 Fishing Effort Detection Sensors | For each targeted fishing method, how many tags/sensors are required (a) per vessel and (b) per gear (e.g., number of longline tags, number of net tags, number of winch/hauler activity sensors)? | Maldives does not follow net and trap methods. |
| 21 | Section IV – Technical Specifications, 4.2.6 Telematic Data Server (TDS): Integration – "Compatibility with FMC applications" (applications not named) | Please list the specific Fisheries Monitoring Centre (FMC) applications to be integrated (product name, vendor, version) and indicate whether each is currently in use or planned. | A phased approach is foreseen. The project will begin with the VMS, and subsequent phases will introduce integration with additional authority modules.<br>The technical requirements for integration with third party applications will be communicated to the successful bidder. |
| 22 | Section IV – Technical Specifications (VMS polling modes defined elsewhere; telemetry interval for effort sensors not specified) | Please confirm the required reporting intervals for fishing-effort sensors under normal, high-risk and emergency conditions, and whether these intervals must align with VMS polling modes. | Reporting interval for fishing effort sensors must be remotely adjustable. The expected interval is between 1 to 10 minutes. |
| 23 | Page 63 – Section IV: Technical Specifications, 4.2.6 Telematic Data Server (TDS): Integration – "Compatibility with FMC applications" | Please list the specific Fisheries Monitoring Centre (FMC) applications to be integrated (product name, vendor, version) and indicate whether each is currently in use or planned. | A phased approach is foreseen. The project will begin with the VMS, and subsequent phases will introduce integration with additional authority modules.<br>The technical requirements for integration with third party applications will be communicated to the successful bidder. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 24 | Page 63 – Section IV: Technical Specifications, 4.2.6 TDS Integration – FMC applications | For each FMC application, please provide interface details: API endpoints, message schemas/formats, authentication/authorization method, supported protocols, expected data ingest rates, and any certification/conformance requirements. | A phased approach is foreseen. The project will begin with the VMS, and subsequent phases will introduce integration with additional authority modules.<br>The technical requirements for integration with third party applications will be communicated to the successful bidder. |
| 25 | Page 63 – Section IV: Technical Specifications, 4.2.6 TDS Integration – Integration scope | Please clarify whether the supplier must: (a) build and validate adapters/connectors for the named FMC applications; or (b) expose standard APIs for FMC vendors to consume. If adapters are required, kindly provide acceptance criteria and test environments (including access and data sets). | A phased approach is foreseen. The project will begin with the VMS, and subsequent phases will introduce integration with additional authority modules.<br>The technical requirements for integration with third party applications will be communicated to the successful bidder. |
| 26 | Section 4.1 Integrated system overview | In section 4.1 Integrated system overview there is a requirement: "Compatibility with existing AIS shore stations, radar, and satellite AIS networks." Since there are no technical Specifications or explanations regarding the existing systems, we believe that this is part of the subsequent integration after the VMS system functionality has been established. Given that there are no Specifications for these systems, it is also not possible to assess the required work for this. Please confirm that the intention is that integration with such external systems should be possible, but that the operational implementation and pricing will be addressed in the next phase of the project, once the technical details and criteria for such integration have been agreed upon. | At this stage, the technical specifications and detailed criteria for such integration are not included in the tender documentation because the implementation will be carried out in phases, and the initial phase focus on establishing the core VMS system functionality.<br>The technical requirements for integration with AIS shore stations, radar, and satellite AIS networks will be defined at a later stage and will be communicated to the successful bidder. It will be implemented through a multi-agency integration process. |
| 27 | Section 4.2.1 Large Scale Vessel (LSV) VMS terminals | For section 4.2.1 Large Scale Vessel (LSV) VMS terminals, please confirm that "Compass Heading: Latest genera on compass heading capability for enhanced naviga on" is a requirement for a built-in | Yes. The requirement is a built-in magnetic compass sensor, ensuring accurate transmission of the vessel's orientation |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | | magnetic sensor, which enables the correct transmission of the vessel's orientation data even when the vessel has no speed, when its speed is very low, or when it is in port. | data even when the vessel is stationary, moving slowly, or in port. |
| 28 | Section 4.2.1 Large Scale Vessel (LSV) VMS terminals | For section 4.2.1 Large Scale Vessel (LSV) VMS terminals, please confirm that "Geozones functionality– Geozone entry and exit events must be reported in monitoring so ware within 5 seconds" refers to the response time from the moment the message is received by the system un l it is processed and displayed on the screen or in a report. The 5-second timeframe does not include the transmission me required for message delivery via the satellite constellation, since for Iridium this is typically from several tens of seconds up to a few minutes. Additionally, please confirm that the requirement is for geozones to be stored in the memory of the VMS terminal itself, enabling the terminal to locally detect vessel entry into and exit from a geozone and to immediately transmit this information to the so ware platform. In this way, the reporting is geozonecrossing centric, ensuring that events are captured and transmitted instantly, and are not dependent on the regular positon - reporting interval, which could otherwise result in delayed detection or, in some cases, a complete omission of the geozone crossing event | Yes. The 5 sec response time refers only to processing latency within the software platform and does not account for message latency over the satellite constellation.<br><br>The geozones can be stored in the VMS terminal memory so that entry/exit events can be detected locally and immediately transmit them. |
| 29 | Section 4.2.1 Large Scale Vessel (LSV) VMS terminals | For section 4.2.1 Large Scale Vessel (LSV) VMS terminals, please confirm that the requirement "Power and Environmental Specifications: – Backup Battery: Autonomous opera on for at least 21 days without primary power" is to be measured on the basis of a repor ng interval of either 60 minutes or 120 minutes. | The 3-week requirement is to be measured at a reporting interval of 60 mins or less. |
| 30 | Section 4.2.3 Fishing Effort Detection | For section 4.2.3 Fishing Effort Detection Sensors, in the table for LOT 1 Hardware supply, the quantity of sensors to be supplied is not | 10 systems for detecting fishing effort are required. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | | specified. Please confirm or state differently that for each Large Scale Vessel, one complete set of sensors is expected, consisting of:<br>- one sensor for winch activity, and<br>- at least one sensor for fishing gear soak time, temperature, and depth profile. | |
| 31 | Section 4.3 Software Platform Specifications | For section 4.3 Software Platform Specifications, subsection 4.3.1 Core System Architecture, regarding the requirement to support Electronic Navigational Charts (ENC), please confirm whether ENC charts for the Maldivian EEZ are required to be provided. Alternatively, please confirm if it is sufficient that the system supports ENC functionality, without the obligation to supply the ENC charts themselves. | ENC charts covering the Maldives EEZ are required to be provided. |
| 32 | Section 4.3 Software Platform Specifications | For section 4.3 So ware Platform Specifications, subsection Multi-Agency Platform Requirements (subsections 4.3.1 to 4.3.4 and 4.8 Integration Specification), please confirm that a phased implementation approach is foreseen. In the first phase, the focus is on monitoring and control of fishing vessels through the VMS system. This project and tender submission refer to this phase.<br>Once this system is implemented and validated, a subsequent phase would add integration with the Law Enforcement Module. In a further phase, integration with the Transport Authority Module would follow. The technical specification currently does not provide descriptions or detailed requirements for these additional systems and functionalities in a way that would allow for resource es ma on or cost quota on. A phased approach would enable the contracting authority to implement the | A phased approach is foreseen. The project will begin with the VMS, and subsequent phases will introduce integration with additional authority modules.<br>Accordingly the software modules must be designed from the outset to support multi-agency interfacing and allow future upgrades.<br>Phase 1 will cover the establishment, commissioning and validation of the VMS for monitoring and control of vessels.<br>It is neither feasible nor required to deliver all multi-agency capabilities at the outset.<br>Each subsequent capability will have to be defined, validated, implemented, tested, |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | | project safely, while maintaining control and oversight of the incremental addition of functions that will ultimately deliver the full multi-agency capability. It is therefore required that the so ware platform is designed to allow such future upgrades, which will be specifically defined and costed in collaboration with the contracting authority for each phase. It is not feasible to deliver all multi-agency requirements at the outset, as these need to be modelled, confirmed, implemented, tested with all stakeholders, and deployed in a controlled manner. | and deployed incrementally, under the full oversight of the Contracting Party. |
| 33 | Section 4.6.1 International Standards Compliance | For section 4.6.1 International Standards Compliance, subsection Data Formats: "Support for UN/EDIFACT and FLUX standard data formats" We understand that support for UN/EDIFACT and FLUX standard data formats is required for the so ware platform, ensuring technical readiness. Please confirm that any practical use of these formats—such as integration s with neighbouring countries or other FLUX nodes—necessitates dedicated custom integration work, including data exchange, mapping, testing, and approval. Such integrations are undertaken as separate projects, which are defined and financially evaluated at the me of implementation. | Refer to SECTION IV: TECHNICAL SPECIFICATIONS Section 4.6.1 |
| 34 | Section 4.6.1 International Standards Compliance | For section 4.6.1 International Standards Compliance, subsection Technical Standards – IEC 60945: Marine equipment certification for all hardware components, please confirm that maritime standards are required for LSV VMS terminals specified under 4.2.1 and not for other equipment such as servers,…, as they are not applicable | Yes. The International Standard 60945 is required only for LSV VMS terminals specified under 4.2.1. |
| 35 | Section 4.7.1 Performance Specifications | For section 4.7.1 Performance Specifications, "Real- me Performance": | An average latency of 30 seconds from device transmission to system display is acceptable. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | | - Position Update Latency: Maximum 30 seconds from device transmission to system display<br><br>- Alert Response Time: Maximum 10 seconds for critical alert processing and notification<br><br>As standard, commercially available satellite networks are used to cover the Maldivian EEZ and provide global coverage, it is not always possible to achieve this level of performance consistently. Therefore, we recommend revising the maximum latency requirement to an average latency, with the following criteria applied:<br><br>- Position Update Latency: Average 30 seconds from device transmission to system display<br><br>- Alert Response Time: Average 10 seconds for cri cal alert processing and notification within the so ware platform, excluding the latency caused by the satellite communication channel | An average of 10 seconds for critical alert processing and notification within the software platform, excluding any latency introduced by the satellite communication channel is acceptable. |
| 36 | 4.1. Integrated system overview. | In regards to the compatibility with existing AIS shore stations, radar, and satellite AIS networks.<br>Please specify formats for AIS, radar and satellite AIS data. | As earlier highlighted, the system will have to be integrated with the Police, Customs, and other agencies along with the few private service providers, which will have to be assessed and done separately. Considering the approach adopted for the project, a phased implementation will have to be adopted, and such requirements will have to be re-evaluated and implemented in phases. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 37 | 4.3.1 Core System Architecture | Is there a strict requirement to run the Core System under Windows Server 2022, or would Rocky Linux be acceptable or RedHatEnterpriseLinux ? | The core system integrates with organsiational systems that are required to run on-prim. Hence, long-term service channel editions such as Windows Server 2022 and Windows Server 2025 (for mainstream support until 2029) may be suited. This does not negate other alternate options that can support the expected organisation integration. |
| 38 | **Database Infrastructure** | In the requirements it states:<br>Includes two licensed instances of Microsoft SQL Server 2022 Standard Edition (core- based):<br>• Instance 1: Primary transactional database.<br>• Instance 2: Reporting/high-availability instance.<br>Regular backups, role separation, and maintenance plans will be implemented for resilience and performance.<br><br>*Would PostgreSQL database server be acceptable instead of the specified Microsoft SQL Server?* | Refer to SECTION IV: TECHNICAL SPECIFICATIONS Core System Architecture (4.3.1). |
| 39 | **Integration Requirements** | Please specify interfaces and type of integration with:<br>• Maritime security agencies databases<br>• Customs, fisheries, police and coast guard systems<br>• Surveillance platforms | Already answered (above). |
| 40 | **4.3.2 – Data Management and** | Please specify where the required data comes from. Is there an official vessel registry that provides this data via API or is this meant to have an interface for manual input (or both)? | Data will have to be input both manually as well as with APIs from existing databases. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | **Information Flows - Required Data Inputs** | "seaworthiness data", i.e. which data and where it comes from. | Further information will be provided to the successful bidder during implementation. |
| 41 | **Required Data Outputs** | Please specify "Operational Reports", i.e. which datasets are to be reported. | As specified in section 4.3.2 for the minimum expectation. |
| 42 | 4.3.3. Multi-Agency Specific Features | Please specify which kind of quota is to be monitored and in which context (by vessel, by total catch by species within area, over time, etc. ) | Quota specifications and business rules to monitor and enforce will be communicated during project implementation. |
| 43 | 4.3.3. Multi-Agency Specific Features | Please specify eLogbook data to be reported | Already answered (see above). |
| 44 | 4.3.3. Multi-Agency Specific Features | Please explain in more detail what is expected in each case;<br>• Trade Compliance: Possibility to interface with cargo clearance and trade documentation systems<br>• Risk Assessment: Behavioural pattern analysis for suspicious activities<br>• Anti-smuggling Operations: Enhanced monitoring protocols for high-risk vessels<br>• Investigation Support: Comprehensive tracking data for compliance and investigative purposes<br>• Multi-location Monitoring: Capabilities across all 14 designated ports and regions (Police) | Already answered (see above). |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| | | • Investigation Tools: Evidence collection with tamper-proof data logging<br>• Case Management: Integration with investigation workflows<br>• Patrol Optimisation: Based on vessel activity analysis<br>• Regional Coordination: Tools for distributed law enforcement operations | |
| 45 | 4.3.3. Multi-Agency Specific Features | is ISO 27001 compliance for information security management sufficient, or is ISO 27001 certification required? | The question is not clear, |
| 46 | 4.4.4 Service Provider Integration Training | Please describe further the expectations regarding "API Development and Integration:<br>• API Framework: Understanding API architecture and authentication<br>• Development Environment: Setting up development and testing environments<br>• Integration Procedures: Step-by-step integration with existing service provider systems<br>• White-label Development: Creating custom branded interfaces for service provider customers<br>*Does the customer expect to be provided with source code and development environment?* | Already answered (see above). |
| 47 | 4.4.4 Service Provider Integration Training | Training to be performed in English and Dhivehi (pg 59, LOT 4.)<br><br>Is training on the core software system expected to be performed in Dhivehi or is English sufficient? | Core training material can be in English. Deliverables can be in both English and Dhivehi or either of the language. |

| # | Reference | Query / Question ) | Responses / Clarifications / Confirmation / Addendum |
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| 48 | **Submission & Compliance Requirements** | **Bid Security Submission** – Original hard copy of bid security must be delivered within 3 business days after bid opening.<br><br>Are courier delays acceptable or is physical receipt in Maldives within 3 days is mandatory? | Yes, submission of hard copy of the Bid security is mandatory. Please refer to ITT 21.2.<br><br>The Original hard copy of the Bid security shall be submitted to the Ministry of Finance and Planning, no later than 3 (three) business days after the Tender Opening deadline. Failure to submit the original hard copy of the bid security is subject to bid disqualification. |